

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
SUIT PRESSURE TRANSDUCER, ITEM 114 ----- SV767788-1/-2 (1)	2/1R	114FM06 External gas leakage. Seal failure or leakage in the transduction device.	END ITEM: Suit gas leakage to ambient. GFE INTERFACE: Excessive consumption of the primary oxygen supply. The SOP is automatically activated during EVA if the suit pressure drops to 3.33 psid. MISSION: Terminate EVA. Loss of use of one EMU. CREW/VEHICLE: None for single failure. Possible loss of crewman with loss of SOP. TIME TO EFFECT /ACTIONS: Seconds TIME AVAILABLE: Minutes. TIME REQUIRED: Immediate. REDUNDANCY SCREENS: A-PASS B-PASS C-PASS	A. Design - -1 Conrac and -2 Gulton: The external leak path for the primary pressure sensor is through a static radial 0-seal. The seal groove configuration and rigidness of assembly provide squeeze under all load conditions. The 0-seal material is fluorocarbon rubber per MIL-R-83248, Class I, Type I. B. Test - Component Acceptance Test - Conrac: The suit pressure sensor is subjected to acceptance testing prior to shipment by the assembly vendor. This testing includes the following tests which insure there is no external leakage at the sensor part. Proof pressure testing to a pressure of 9 psig for one minute using fixture which simulates the sensor installation in the PLSS. Calibration check of sensor to 6 psig, using a fixture which simulates the sensor installation. Gulton: The suit pressure sensor is subjected to acceptance testing prior to shipment by the assembly vendor. This testing includes the following tests which insure there is no external leak path at the sensor part. Proof pressure testing to a pressure of 9 psig for one minute using fixture which simulates the sensor installation on the PLSS. Calibration check of sensor to 6 psig using a fixture which simulates the sensor installation. PDA Test - The suit pressure sensor undergoes proof, leakage and performance testing per SEMU-60-010 after installation on the PLSS. Certification Test - Certified for a useful life of 20 years (Ref. EMUM1-0084). C. Inspection - The sensor part configuration is visually and dimensionally inspected to B/P requirements to insure there will not be any leakage paths. The 0-seals are screened for surface defects per SVHS3432, Class III, to insure there are no defects which would cause a leakage path. D. Failure History - None for this failure mode. E. Ground Turnaround - Tested for non-EET processing per FEMU-R-001, Final SEMU Gas Structural and Leakage. None for EET processing. F. Operational Use - Crew Response - PreEVA: When detected during leak check, trouble shoot problem, if no success consider EMU 3 if available. EMU no go for EVA. EVA: When CWS data confirms an accelerated primary O2 use rate, terminate EVA.

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114FM06

Training - Standard EMU training covers this mode.
Operational Considerations -
Flight rules define go/no go criteria related to EMU pressure regulation.
EVA checklist procedures verify hardware integrity and systems operational status prior to EVA. Real Time Data system allows ground monitoring of EMU systems.

EXTRAVEHICULAR MOBILITY UNIT
SYSTEMS SAFETY REVIEW PANEL REVIEW
FOR THE
I-114 PRESSURE SUIT SENSOR
CRITICAL ITEM LIST (CIL)

EMU CONTRACT NO. NAS 9-97150

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